Increased U.S. Imports

GAO

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General Accounting Office
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National Security and
International Affairs Division

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The Honorable Ron Wyden
Chairman, Subcommittee on Regulation,
Business Opportunities, and Energy
Committee on Small Business
House of Representatives

Dear Mr. Chairman:

In response to your request, we have reviewed the petroleum industries of eight South American countries that produce petroleum but are not major exporters. These countries are Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Peru, and Trinidad and Tobago. Specifically, you asked us to provide information on (1) the amount of crude oil the United States imports from the eight South American countries, (2) expected crude oil production for these countries through the year 2010, and (3) investment reforms these countries have recently made in their petroleum industries.

Results in Brief

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South American Oil: Marginal Producers Not a Likely Source for Increased U.S. Imports

The United States imports about 4 percent of its crude oil from the eight South American countries reviewed for this study, with most of it coming from Colombia, Ecuador, and Trinidad and Tobago. The eight countries' proven crude oil reserves[1] are expected to increase about 30 percent by the year 2000, and then decrease about 2 percent by the year 2010. Oil production is expected to increase about 21 percent over 1990 by the year 2000, and then level off until the year 2010. By the year 2000, only Colombia, Ecuador, Peru, and Trinidad and Tobago will have the potential to export crude oil, with Ecuador becoming a net oil importer by 2010.

While the United States imports some oil from these countries, as a group the eight countries are currently net oil importers because combined domestic oil consumption exceeds oil production. Furthermore, their net oil imports are expected to continue to increase to the year 2010. Thus, there does not appear to be the potential for the United States to obtain increased amounts of oil from these countries.

To encourage foreign and private investment in their petroleum industries, the eight countries have undertaken various policy reforms including

[1]Crude oil reserves are classified as "proven" if they are recoverable under existing economic and operating conditions.

converting government-owned or -controlled oil companies to private entities and removing investment and ownership restrictions on foreign investors. However, the eight countries need to invest significant amounts of capital in their petroleum sectors to realize even their limited potential as oil producers.

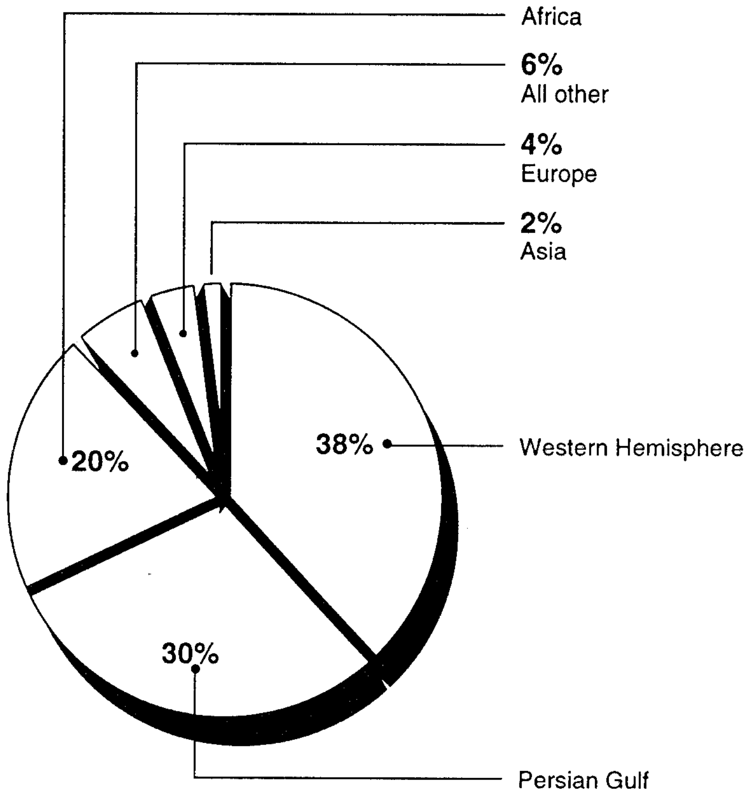
Background

Military and political instability in the Persian Gulf region exposes the United States to oil supply disruptions. The Department of Energy's February 1991 report entitled U.S. National Energy Strategy calls for the diversification of U.S. oil sources and a greater reliance on imports from countries outside the Persian Gulf. Figure 1 shows the eight oil-producing countries in the Western Hemisphere (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Peru, and Trinidad and Tobago) that are the subjects of this report.

Figure 1: Eight South American Oil-Producing Countries

In 1990, the United States imported about 5.9-million barrels of crude oil per day from worldwide sources. Figure 2 shows the percent of U.S. crude oil imports by region.

Figure 2: Percent of Total U.S. Crude Oil Imports by Region (1990)



Note: The principal U.S. crude oil suppliers by region in 1990 were the following: Western Hemisphere (Canada, Mexico, and Venezuela); Persian Gulf (Iraq, Kuwait, and Saudi Arabia); Africa (Algeria, Angola, Gabon, and Nigeria); Europe (United Kingdom and Norway); and Asia (Indonesia).

Source: Department of Energy.

Limited South American Oil Exports to the United States

In 1990, five of the eight South American countries reviewed in this study exported some crude oil to the United States—Argentina, Colombia, Ecuador, Peru, and Trinidad and Tobago—which together accounted for

4 percent of total U.S. crude oil imports. Most of the U.S. crude oil imports from the Western Hemisphere came from Canada, Mexico, and Venezuela.[2]

Table 1 shows that U.S. crude oil imports from the South American countries reviewed for this study increased from 174,000 barrels per day in 1980 to 264,000 barrels per day in 1990, an increase of about 52 percent, with average annual increases of about 4 percent.

Table 1: U.S. Crude Oil Imports from Eight South American Countries (1980-1990)

Barrels in thousands

	Average number of barrels per day						
Country	**1980**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**
Argentina	0	0	0	2	3	9	9
Bolivia	1	0	1	0	0	0	0
Brazil	1	0	0	0	0	0	0
Chile	0	0	0	0	0	0	0
Colombia	0	0	57	115	106	136	140
Ecuador	17	56	64	23	34	80	38
Peru	40	12	9	1	5	1	2
Trinidad and Tobago	115	96	93	75	71	73	75
Total	**174**	**164**	**224**	**216**	**219**	**299**	**264**

Source: Department of Energy.

Increased Oil Production

As shown in table 2, the eight countries' oil production increased from about 1.5-million barrels per day in 1980 to about 2.2-million barrels per day in 1990, an increase of about 47 percent. Increased production occurred in Brazil, Colombia, and Ecuador; however, production in Argentina, Bolivia, Chile, Peru, and Trinidad and Tobago declined. The Department of Energy and the U.S. Geological Survey expect the eight countries' oil production to increase by 21 percent between 1990 and the year 2000, to about 2.6-million barrels per day, then remain at approximately the same level to the year 2010. Oil production is expected

[2]See Mexican Oil: Issues Affecting Potential U.S. Trade and Investment (GAO/NSIAD-92-169, Mar. 18, 1992); and Venezuelan Energy: Oil Production and Conditions Affecting Potential Future U.S. Investment (GAO/NSIAD-92-73, Dec. 12, 1991).

to increase between 1990 and 2010 for Bolivia, Brazil, Chile, Colombia, and Peru and decrease for Argentina, Ecuador, and Trinidad and Tobago.

Table 2: Eight Countries' Crude Oil Production (1980-2010)

Barrels in thousands

	Average number of barrels per day				
				Projected	
Country	**1980**	**1985**	**1990**	**2000**	**2010**
Argentina	491	460	483	420	370
Bolivia	27	20	21	30	30
Brazil	182	564	635	1,030	1,010
Chile	33	36	20	30	30
Colombia	126	176	440	480	490
Ecuador	204	281	285	270	250
Peru	195	190	129	230	290
Trinidad and Tobago	211	175	150	130	110
Total	**1,469**	**1,902**	**2,163**	**2,620**	**2,580**

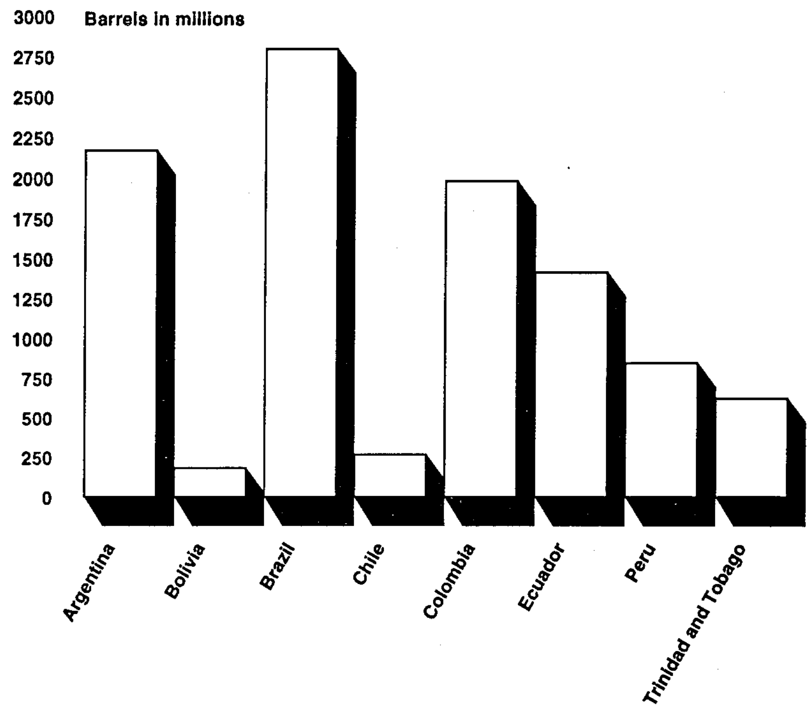
Source: Department of Energy, Energy Information Administration, and U.S. Geological Survey.

While these eight countries as a group are not likely to be net exporters, increased oil production is important. To the extent that these countries can produce more of their own needs, their scarce foreign currency can be used to import other products and these countries will add less to increases in world demand for imported oil.

Proven Crude Oil Reserves

The forecasts of future oil production are based in part on estimates of how proven oil reserves will change in future years. The eight countries had about 10.3-billion barrels of proven crude oil reserves in 1990. Figure 3 shows each country's proven crude oil reserves in 1990.

Figure 3: Proven Crude Oil Reserves
(1990)



Source: U.S. Geological Survey.

The U.S. Geological Survey estimates that proven crude oil reserves for the eight countries will likely grow from 10.3-billion barrels in 1990 to 13.4-billion barrels in the year 2000, an increase of 30 percent. However, by the year 2010, proven crude oil reserves are expected to decrease to 13.1-billion barrels, a decrease of 2 percent.[3]

[3]The U.S. Geological Survey estimate of future proven crude oil reserves assumes that (1) adequate investment capital will be available to finance oil exploration, development, and recovery; (2) half the estimated undiscovered oil will be found by the year 2010; (3) reserves will increase at one-half the U.S. rate; and (4) the reserve-to-production ratio will be 16 to 1. See Charles D. Masters et al., "World Oil and Gas Resources—Future Production Realities," Annual Review of Energy, Vol. 15 (1990), pp. 23-51.

Increased Oil Exports

On a country-by-country basis, the crude oil exports and the net export potential[4] vary greatly among the eight countries. Table 3 shows that crude oil exports were 457,000 barrels per day in 1990, with Colombia, Ecuador, and Trinidad and Tobago accounting for about 96 percent of these exports.

Table 3: Eight Countries' Gross Crude Oil Exports (1980-1990)

Barrels in thousands

	Average number of barrels per day						
Country	**1980**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**
Argentina	0	9	3	2	8	12	17
Bolivia	0	0	1	1	0	0	0
Brazil	1	0	0	0	4	0	0
Chile	0	0	0	0	0	0	0
Colombia	0	0	103	146	144	164	192
Ecuador	110	169	196	123	189	175	170
Peru	57	24	13	3	5	1	3
Trinidad and Tobago	136	98	93	78	74	73	75
Total	**304**	**300**	**409**	**353**	**424**	**425**	**457**

Note: Figures for 1990 include natural gas liquids.

Source: Department of Energy, Energy Information Administration.

Of the eight countries, the Energy Department estimates that Colombia, Ecuador, Peru, and Trinidad and Tobago have the vast majority of net export potential over the next two decades. However, it is estimated that by the year 2010 Ecuador will become a net importer.

However, as a group, the eight countries examined for this study are likely to remain net oil importers. According to the Department of Energy, the eight countries' combined net oil imports are expected to climb from 226,000 barrels of oil per day in 1990 to 1.8-million barrels of oil per day by the year 2010. Although countries such as Brazil are expected to have significant increases in oil production, they will remain net oil importers because increases in their domestic oil consumption are expected to outpace production increases. Brazil is responsible for about 75 percent of

[4]Net oil export potential is an estimate of the amount of oil a country produces in excess of the amount needed for domestic consumption.

the group's expected net oil imports through the year 2010, followed by Chile and Argentina as the next largest potential net oil importers.

Recent Petroleum-Related Investment Reforms

The eight countries need significant capital investment to develop their crude oil exploration, production, refining, and distribution potential. To attract needed capital the eight countries are instituting reforms to make their petroleum sectors more attractive to foreign and private investors.

Information we gathered during the course of our review indicates that these countries will need funding in the order of magnitude of about $6.4 billion annually to sustain their oil exploration, production, refining, and distribution capabilities (see table 4).

Table 4: Estimate of Eight Countries' Annual Oil Investment Needs

Dollars in millions

Country	Investment needs
Argentina	$1,000
Bolivia	80
Brazil	3,500
Chile	190
Colombia	700
Ecuador	150
Peru	300
Trinidad and Tobago	500
Total	**$6,420**

The need for significant capital investment in the petroleum sectors of these countries has been studied by the East-West Center,[5] which reported that[6]

- Argentina needs investment capital to increase oil production, upgrade refineries, and improve oil recovery from marginal fields;

[5]The East-West Center, located in Hawaii, was established by the U.S. Congress in 1960 to promote technical and cultural exchanges between the East and the West. The East-West Center has been actively involved in Latin American oil issues. For example, it organized the 1991 InterAmerican Petroleum and Gas Conference for the U.S. Department of Energy and the U.S. Trade and Development Program.

[6]"Issues in Financing Latin American/Caribbean Hydrocarbon Projects," Latin American/Caribbean Oil and Gas Report, Series No. 2 (Honolulu, Hawaii: Resources Programs, East-West Center, Apr. 1992).

- Bolivia needs significant capital to achieve its goal of tripling total crude oil production by the year 2000;
- Brazil needs investment capital to increase drilling and recovery to substantially expand crude oil production;
- Chile needs investment capital to expand oil exploration, production, refining, and pipeline construction;
- Colombia needs investment capital to increase oil exploration and production, and upgrade and build refineries;
- Ecuador needs substantial investment capital to remain an oil exporter and to carry out development plans for handling heavy oil, from exploration to refining;
- Peru needs investment capital to expand oil production and drilling, and rehabilitate pipelines; and
- Trinidad and Tobago needs investment capital to improve secondary oil recovery.

According to the Departments of State and Commerce, the eight countries have made numerous petroleum-related investment reforms, as described in the following sections.

Argentina

The government of Argentina completely deregulated its petroleum industry on January 1, 1991, to (1) permit petroleum-producing companies to sell oil domestically or internationally at world market prices and (2) promote competition among producers by removing entry barriers and eliminating crude oil and oil-product delivery quotas. Argentine law also allows foreign investors to repatriate their capital and profits. Further, Argentina announced plans in 1991 to open new fields or undeveloped areas to exploration through international bidding for exploration permits with or without the participation of the Argentine government.

The government-owned oil company, Yacimientos Petroliferos Fiscales (YPF), has shared the petroleum sector with private companies through joint ventures to produce, refine, transport, and market crude oil. YPF expects to open its refinery, pipeline, tanker, and distribution facilities to foreign investors in 1992 and 1993. By the end of 1993, YPF is to be converted into a smaller, publicly traded private stock company. Also, under current privatization plans, by late 1992 the government's natural gas transmission and distribution company, Gas del Estado, will be operated by the private sector under the supervision of a regulatory authority.

Bolivia

The government of Bolivia enacted a new and more liberal Hydrocarbons Law in November 1990 authorizing the state-owned oil company, Yacimientos Petroliferos Fiscales Bolivianos (YPFB), to enter into joint venture contracts with foreign and private firms and contract companies to take over YPFB oil fields and operations, including refining, marketing, and transportation. The law guarantees national treatment and free currency convertibility and remittances. Bolivian constitutional restrictions, which still apply, mandate that hydrocarbon deposits are the property of the state.[7]

Brazil

The government of Brazil's 1988 constitution does not allow for foreign direct investment in oil exploration or production, and restricts investment in petrochemicals. The state-owned oil company, Petroleos Brasileiros (Petrobras), currently has a legal monopoly over petroleum exploration, refining, and much of the distribution sector. However, private sector companies, including multinational companies, are allowed to compete directly with Petrobras in the petroleum marketing or gas station ownership segment of the petroleum distribution sector.

The Brazilian administration has proposed bills to permit further participation by foreign and private firms in petroleum production, refining, transportation, and marketing. These bills may be voted on during 1992. In 1993, Brazil will hold a referendum to determine whether the petroleum sector should continue to be state controlled or opened to private investment.

Chile

The government of Chile owns all of the country's oil and gas deposits, but allows foreign exploration and production through joint ventures. The state-owned oil company, Empresa Nacional del Petroleo, participates in joint ventures with foreign oil companies.

Colombia

The government of Colombia owns all of that country's natural resources. Foreign investment in oil exploration and production is conducted through contracts in association with the state-owned oil company, Empresa Colombiana de Petroleos (ECOPETROL).

[7]"Hydrocarbons" include oil and natural gas.

The Colombian government allows foreign companies to own 100 percent of a company involved in exploration or production, with approval from the Colombian Ministry of Mines and Energy. However, it does not permit foreign investors to import or refine oil. The Colombian government is currently reviewing restrictions on oil refining. Petroleum distribution is increasingly being performed by the private sector.

Ecuador

The government of Ecuador signed a decree in 1991 liberalizing foreign and private direct investment in the petroleum sector. While the state-owned oil company, Petroleos de Ecuador, owns all oil that is produced, foreign investors are given long-term exclusive contracts to explore for and produce oil. They receive a return for their investment in either a share of the crude oil or cash. While Ecuador permits foreign companies to invest in oil exploration and production, foreign firms are not permitted to invest in refining and marketing.

Peru

The government of Peru's new Petroleum Law, enacted in September 1991, allows private companies to freely import, manufacture, refine, and market oil and gas products and to carry out basic petrochemical operations, dissolving Petroperu's 20-year refining and distribution monopoly. In addition, the law authorizes the state-owned oil company, Petroleos del Peru, to form joint ventures with private and foreign investors in all phases of the oil and gas industry.

Peru also enacted two investment laws, which apply to the petroleum sector, including the exploration and development of both oil and gas. The General Investment Law, enacted in October 1991, generally guarantees national treatment and opens all sectors to foreign investors. A twin law, the Framework Law for Private Investment, enacted in December 1991, again guarantees foreign and private investors the right to invest in any sector of the economy under any business or contractual form permitted by the constitution or law of Peru.

Trinidad and Tobago

The government of Trinidad and Tobago allows foreign investors and companies to compete for oil exploration and production activities, but not refining, which must be performed under an arrangement with a state enterprise. Participation by foreign investment in the petroleum sector is obtained through oil production sharing contracts, licensing, and joint ventures with a state oil company. The state owns 50 percent or more of

enterprises in the oil, gas, and petrochemical industries. A 1990 law closes petroleum marketing to foreign investment. Foreign investment also requires approval from the government, which may determine the investment conditions for a venture. The government allows repatriation of capital and profits with the Central Bank's approval.

Scope and Methodology

Information for this report was obtained from the following sources: the Departments of State, Commerce, Energy, and the Treasury; the Office of the U.S. Trade Representative; the U.S. Geological Survey; and the East-West Center. Information was also obtained from the U.S. embassy in each of the eight countries. Information in this report on South American legal matters does not reflect our independent analysis of the matters but rather is a synopsis of secondary sources available in the U.S. government.

We performed our review from June 1991 through April 1992 in accordance with generally accepted government auditing standards.

As requested, we did not obtain agency comments on this report. However, we discussed the information presented in this report with program officials from the Departments of State, Commerce, Energy, and the Treasury; the Office of the U.S. Trade Representative, and the U.S. Geological Survey. Their comments have been incorporated in the report where appropriate.

As agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, we will send copies to the Secretaries of State, Commerce, Energy, and the Treasury; the U.S. Trade Representative; the Director of the U.S. Geological Survey; the Director of the East-West Center; and interested congressional committees. We will also make copies available to others upon request.

Please contact me on (202) 275-4812 if you or your staff have any questions concerning this report. Other major contributors to this report were Elliott C. Smith, Assistant Director; and Michael J. Avenick, Evaluator-in-Charge.

Sincerely yours,

Allan I. Mendelowitz

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International Trade and Finance Issues